Jeffrey C. Erlich

Group Leader

jerlich @ ucl.ac.uk

https://erlichlab.org

Sainsbury Wellcome Centre
University College London
25 Howland St.
London W1T 4JG
United Kingdom

Education

New York University, *PhD*. *Center for Neural Science* graduated 2006

To Fear or Not to Fear: The role of the amygdala & prefrontal cortex in the regulation of fear. Advisor: Joseph E. LeDoux

McGill University, *BSc.* *First Class Joint Honours Computer Science and Neuroscience* graduated 1998

Experience

Sainsbury Wellcome Center, University College London *Group Leader* Jan 2022-present

New York University Shanghai *Assistant Professor* Sept 2015-present

New York University Shanghai *Graduate Coordinator for Neuroscience* Sept 2014-Aug 2021

New York University Shanghai *Assistant Professor Faculty Fellow* Sept 2014-Sept 2015

Princeton University *Associate Research Scholar (Advisor: C.D. Brody)* Jan 2007-Aug 2014

Prologue *Consultant* Fall 2005

Performed due diligence for a neuroscience technology venture. Lead: Nimrod Goor.

Nevo Technologies *Computer Systems Analyst* 1998-1999

Developed education registration system for Harvard University. Designed Electronic Sectioning system including web interface, servlets, database and Java server objects. Lead: Jonathan Clay

McGill University *Research Staff, Department of Psychology* Summer 1996

Role of hippocampus in spatial information processing.
Advisor : Dr. Matthew Shapiro.

Clarke Institute of Psychiatry *Research Staff, Human Brain Lab* Spring 1994 and Summer 1995

Phospholipid metabolism in human brain pathology.
Advisors : Drs. Steven Kish & Brian Ross

Peer-Reviewed Publications

Auer, S., Haeltermann, N.A., Weissberger, T.L., Erlich, J.C., Susilaradeya, D., Julkowska, M., Gazda, M.A., Schwessinger, B., Jadavji, N.M., Reproducibility for Everyone Team, Abitua, A., Niraulu, A., Shah, A., Clyburne-Sherinb, A., Guiquel, B., Alicea, B., LaManna, C., Ganguly, D., Perkins, E., Jambor, H., Ho Li, I.M., Tsang, J., Kamens, J., Teytelman, L., Paul, M., Cronin, M., Schmelling, N., Crisp, P., Kutum, R., Phuyal, S., Sarabipour, S., Roy, S., Bachle, S.M., Tran, T., Ford, T., Steeves, V., Ilangovan, V., Baburamani, A., Bachle, S., 2021. A community-led initiative for training in reproducible research. eLife 10, e64719. https://doi.org/10.7554/eLife.64719

Duan, C.A., Pagan, M., Piet, A.T., Kopec, C.D., Akrami, A., Riordan, A.J., Erlich, J.C., Brody, C.D., 2021. Collicular circuits for flexible sensorimotor routing. Nat Neurosci 24, 1110–1120. https://doi.org/10.1038/s41593-021-00865-x

Lukinova, E., Erlich, J.C., 2021. Quantifying the contribution of individual variation in timing to delay-discounting. Sci Rep 11, 18354. https://doi.org/10.1038/s41598-021-97496-w

van Viegen, T., Akrami, A., Bonnen, K., DeWitt, E., Hyafil, A., Ledmyr, H., Lindsay, G.W., Mineault, P., Murray, J.D., Pitkow, X., Puce, A., Sedigh-Sarvestani, M., Stringer, C., Achakulvisut, T., Alikarami, E., Atay, M.S., Batty, E., Erlich, J.C., Galbraith, B.V., Guo, Y., Juavinett, A.L., Krause, M.R., Li, S., Pachitariu, M., Straley, E., Valeriani, D., Vaughan, E., Vaziri-Pashkam, M., Waskom, M.L., Blohm, G., Kording, K., Schrater, P., Wyble, B., Escola, S., Peters, M.A.K., 2021. Neuromatch Academy: Teaching Computational Neuroscience with Global Accessibility. Trends in Cognitive Sciences 25, 535–538. https://doi.org/10.1016/j.tics.2021.03.018

Lukinova, E., Wang, Y., Lehrer, S. F., & Erlich, J. C. (2019). Time preferences are reliable across time- horizons and verbal versus experiential tasks. eLife, 27. https://doi.org/10.7554/eLife.39656.001

Ebbesen, C. L., Insanally, M. N., Kopec, C. D., Murakami, M., Saiki, A., & Erlich, J. C. (2018). More than Just a "Motor": Recent Surprises from the Frontal Cortex. The Journal of Neuroscience, 38(44), 9402–9413. https://doi.org/10.1523/JNEUROSCI.1671-18.2018

Juavinett, A.L., Erlich, J.C., and Churchland, A.K. (2018). Decision-making behaviors: weighing ethology, complexity, and sensorimotor compatibility. Current Opinion in Neurobiology 49, 42–50.

Piet, A.T., Erlich, J.C., Kopec, C.D., and Brody, C.D. (2017). Rat Prefrontal Cortex Inactivations during Decision Making Are Explained by Bistable Attractor Dynamics. Neural Computation 29, 2861–2886.

Scott, B.B., Constantinople, C.M., Erlich, J.C., Tank, D.W., Brody, C. D. (2015) Sources of noise during accumulation of evidence in unrestrained and voluntarily head-restrained rats. *eLife,* e11308 http://dx.doi.org/10.7554/eLife.11308

Kopec, C.D., Brunton, B.W., Erlich, J. C., Deisseroth, K. and Brody, C. D. (2015) Cortical and subcortical contributions to short-term memory for orienting movements. *Neuron*, 88 (2), 367-377.

Duan, C.A., Erlich, J.C., and Brody, C.D. (2015) Requirement of prefrontal and midbrain regions for rapid executive control of behavior in the rat. *Neuron,* 86 (6), 1491-1503. (Previewed in *Neuron,* DOI: "10.1016/j.neuron.2016.06.004")

Erlich, J. C., Brunton, B.W., Duan, C.A., Hanks, T.D., and Brody, C. D. (2015) Distinct effects of prefrontal and parietal cortex inactivations on an accumulation of evidence task in the rat. *eLife,* 4:e05457

Hanks, T.D., Kopec, C.D., Brunton, B.W., Duan, C.A., Erlich, J. C., and Brody, C. D. (2015) Differential roles in decision-making for accumulation-correlated neurons in parietal and prefrontal cortex. *Nature,* doi:10.1038/nature14066

Erlich, J.C. and Brody, C.D. (2013) What to do and how *Nature* 503, 45–47

Erlich, J. C., Bush, D. E. A., and Ledoux, J. E. (2012). The role of the lateral amygdala in the retrieval and maintenance of fear-memories formed by repeated probabilistic reinforcement. *Front Behav Neurosci* 6, 16. (Commentary in *Frontiers in Neuroscience*, DOI: "10.3389/fnins.2013.00017")

Erlich, J. C., Bialek, M., and Brody, C. D. (2011). A cortical substrate for memory-guided orienting in the rat. *Neuron* 72, 330–343. (Previewed in *Neuron,* DOI: "10.1016/j.neuron.2011.10.002")

Pai, S., Erlich, J. C., Kopec, C., and Brody, C. D. (2011). Minimal impairment in a rat model of duration discrimination following excitotoxic lesions of primary auditory and prefrontal cortices. *Front Syst Neurosci* 5, 74.

Ross, B. M., Moszczynska, A., Erlich, J., and Kish, S. J. (1998a). Low activity of key phospholipid catabolic and anabolic enzymes in human substantia nigra: possible implications for Parkinson's disease. *Neuroscience* 83, 791–798.

Ross, B. M., Moszczynska, A., Erlich, J., and Kish, S. J. (1998b). Phospholipid-metabolizing enzymes in Alzheimer's disease: increased lysophospholipid acyltransferase activity and decreased phospholipase A2 activity. *J Neurochem* 70, 786–793.

Ross, B. M., Hudson, C., Erlich, J., Warsh, J. J., and Kish, S. J. (1997). Increased phospholipid breakdown in schizophrenia. Evidence for the involvement of a calcium-independent phospholipase A2. *Arch Gen Psychiatry* 54, 487–494.

Current Preprints

Zhu, X., Erlich, J.C., 2021. A rodent paradigm for studying perceptual decisions under asymmetric reward. arXiv:2112.12278 [q-bio].

Zhu, X., Moller-Mara, J., Dubroqua, S., Bao, C., Erlich, J.C., 2021. Frontal but not parietal cortex is required for decisions under risk (preprint). Neuroscience. https://doi.org/10.1101/2021.11.19.469107

Lukinova, E., Erlich, J.C., 2021. Does endogenous variation in stress modulate risk and time preferences? (preprint). BiorXiv. https://doi.org/10.1101/2021.09.18.460891

Kent, B.A., Holman, C., Amoako, E., Antonietti, A., Azam, J.M., Ballhausen, H., Bediako, Y., Belasen, A., Carneiro, C.F.D., Chen, Y.-C., Compeer, E., Connor, C., Crüwell, S., Debat, H., Dorris, E., Ebrahimi, H., Erlich, J.C., Chiappe, F.F., Fischer, F., Gazda, M.A., Glatz, T., Grabitz, P., Heise, V., Kent, D., Lo, H., Mcdowell, G., Mehta, D., Neumann, W.-J., Neves, K., Patterson, M., Penfold, N., Piper, S.K., Puebla, I., Quashie, P., Quezada, C.P., Riley, J.L., Rohmann, J.L., Saladi, S., Schwessinger, B., Siegerink, B., Stehlik, P., Tzilivaki, A., Umbers, K., Varma, A., Walavalkar, K., de Winde, C.M., Zaza, C., Weissgerber, T.L., 2021. Empowering Early Career Researchers to Improve Science (preprint). Open Science Framework. https://doi.org/10.31219/osf.io/p5evw

Preregistrations

Lukinova, Evgeniya, Shengjie Xu and Jeffrey C Erlich. "Intertemporal choice across short and long time horizons: an fMRI study." October 6, 2019. https://osf.io/7fydc

Awards and Honors

Champalimaud Neuroscience Symposium *Travel Award* 2011
Howard Hughes Medical Institute *Predoctoral Fellowship in the Biological Science* 2000-2005
Society for Neuroscience *FENS Travel Award* 2004
McGill University *Dean's Honour List* 1996

Grants

Application Date	Agency	Title	Requested	Received
Dec 2015	STCSM	Deep-Cognition (co-PI with Zheng Zhang)	CN¥400,000	CN¥400,000
Aug 2014	TTP	Thousand Talents Program Distinguished Young Scholar (青年千人计划申报书)	CN¥1,000,000	CN¥0
Feb 2015	NYUSH	NYUSH Research Challenge (with Steven Lehrer)	CN¥650,000	CN¥520,000
July 2015	TTP	Thousand Talents Program Distinguished Young Scholar (青年千人计划申报书)	CN¥1,000,000	CN¥0
Nov 2015	NYU	NYU Global Seed (with Rob Froemke)	CN¥1,000,000	CN¥870,000
Apr 2016	STCSM	Brain and Computation (XJ Wang PI)	CN¥500,000	CN¥500,000
Nov 2016	HHMI	International HHMI	$500,000	$0
Jan 2017	NYUSH	NYU-ECNU JRI (with Xiaoming Zhou)	CN¥450,000	CN¥350,000
Mar 2017	NSFC	NSFC General 2017	CN¥1,300,000	CN¥0
Mar 2018	NYSCF	NYStem Cell Foundation.	$1,500,000	$0
Mar 2019	NSFC	NSFC General 2019	CN¥950,000	CN¥580,000
Aug 2019	NYUSH	Research Boost Fund	CN¥250,000	CN¥250,000

Courses Taught at NYU

Title	Course #	Term	Year	Enrollement
Neuroscience and Free Will	NEUR-SHU 10J-001	january	2015	17
Cellular & Molecular Neuroscience	NEUR-SHU 301-001	fall	2015	1
Neuroscience and Free Will	NEUR-SHU 10J-001	spring	2016	25
Cellular & Molecular Neuroscience	NEUR-SHU 210-001	fall	2016	6
Independent Study - NS Capstone	NEUR-SHU 997-001	fall	2016	5

Independent Study - NS Capstone	NEUR-SHU 997-001	spring	2017	1
Cellular & Molecular Neuroscience	NEUR-SHU 210-001	fall	2017	3
Independent Study - NS Capstone	NEUR-SHU 997-001	fall	2017	2
Free Will and the Brain	NEUR-SHU 10-1	spring	2018	13
Independent Study II - Neural Science	NEUR-SHU 998-1	spring	2018	1
Cellular & Molecular Neuroscience	NEUR-SHU 210-001	fall	2018	3
Independent Study - NS Capstone	NEUR-SHU 997-001	fall	2018	1
Cellular & Molecular Neuroscience	NEUR-SHU 210-001	fall	2019	6
Independent Study - Biology	BIOL-SHU 400-001	fall	2019	1
Free Will and the Brain	NEUR-SHU 10-1	fall	2020	9
Cellular & Molecular Neuroscience	NEUR-SHU 210-001	fall	2020	9
Casual inference course	NEURL-GA 3042 005	Spring	2021	4
Independent Study - NS Capstone	NEUR-SHU 997-001	Spring	2021	1

Other Teaching

Neuroeconomics Summer School at NYUSH: Decision-making **2015, 2017**
Computational & Cognitive Neuroscience Summer School: Decision-making **2016,2017,2018**

NYU Shanghai Service

From	To	Description
2014-09-01	2017-05-01	Co-organizer of the Neuroscience Seminar Series
2014-11-24	2017-03-01	Faculty Affairs Committee (Faculty Council)
2014-09-01	2021-01-01	Faculty Recruitment (Attend job talks, meals, interview candidates)
2015-01-01	2021-08-01	Director of Graduate Studies for the SH-track Neural Science Program
2016-05-05	present	IACUC Committee Member
2016-12-12	2017-09-01	Ad-hoc Commitee for Critical Inquiry
2017-05-01	2018-05-01	Science representative on core-curriculum assessment committee
2019-09	2021-04	Evaluate the Science, Technology, & Society requirement for the core
2019-09	2021-01	Urban Poverty and Development core working group (lead: Zhonglin Lu)
2019-09	2020-09	Search committee for Neural Science Teaching Position

Professional Activities

Manuscript Reviewer: *Nature, Nature Communications, Nature Neuroscience, Neuron, Journal of Neuroscience, Frontiers in Systems Neuroscience, Journal of Neurophysiology, COSYNE, eLife, NIPS, PNAS, Current Biology, Neuroscience Bulletin, Communications Biology*
Grant Reviewer*: Marie-Curie Fellowship, MRC*
Reviewing Editor: *Frontiers in Neural Circuits*
Society Membership: *Society for Neuroscience*
COSYNE Workshop: Neural mechanisms of orienting decisions across the animal kingdom Mar 2013
Neuromatch Academy *China Technical Chair* April 2020-July 2020
eLife Ambassador April 2019-April 2020

Select Conference Attendance

Society For Neuroscience: 2018, 2019

Society for Neuroeconomics: 2018-2021

COSYNE: 2021

Invited Talks

Asia-Pacific Computational and Cognitive Neuroscience,Taipei Sept 2020

Pujiang Innovation Forum, Shanghai May 2019

Society for Neuroscience: mini-symposium, San Diego, CA Nov 2018

2nd NYU International Meeting in Experimental Social Science, NY	June 2018
University of Zurich, Zurich, Switzerland	Apr 2018
Center for Brain & Intelligence, Tsinghua University, Beijing	Dec 2017
Chinese Society for Neuroscience, Tianjin	Oct 2017
SKL Symposium, Hong Kong University	April 2016
Korean Neuroscience Society Meeting	Sept 2015
Deutsches Primatenzentrum, Germany	July 2015
Canonical Neural Computation, Italy	July 2015
Shanghai JiaoTong University	June 2015
International Conference on Prefrontal Cortex, Kunming	Dec 2014
DongFang Forum, Shanghai	Nov 2014
COSYNE 2014 Workshop	March 2014
NYU	Jan 2013
NYU-Shanghai	Dec 2013
Institute of Neuroscience, Shanghai	Dec 2013
Gordon Research Conference: Eye Movements	July 2013
New York University. SPINES.	Feb 2013
Allen Institute for Brain Science.	July 2012
Mount Sinai Medical School.	April 2012
COSYNE Workshop.	Feb 2012
Sloan-Swartz Meeting. Hosted by Yale University.	June 2010
New York University. LeDoux 20th Anniversary Symposium.	Dec 2009
Gatsby Computation Neuroscience Unit. University College London.	June 2006